IN THE CLAIMS:

This listing of claims will replace all prior versions, and listing, of claims in the application:

1. (Previously Presented) For use with a broadcast system operable to carry digital packets to multiple recipients simultaneously, a content liaison unit comprising:

a content provider (CP) interface to receive, from a content provider unit, a specification of digital content that is to be inserted into said broadcast system and an insertion schedule by which said digital content is to be inserted into said broadcast system, wherein said digital content pertains to data broadcasting;

a collection unit, responsive to said CP interface, to collect digital files of said digital content by at least one of actively retrieving and reactively receiving said digital files from a source thereof identified in said specification; and

an insertion unit, responsive to said CP interface, to transfer said digital files from said collection unit to said broadcast system according to said insertion schedule.

2. (Previously Presented) The liaison unit of claim 1, wherein said collection unit includes memory into which said collection unit is operable to store said digital files so as to decouple, in time, the collection and the transfer of said digital files.

3. (Previously Presented) The liaison unit of claim 1, wherein:

said content provider unit is a first content provider unit, said specification is a first specification and said insertion schedule is a first insertion schedule;

said CP interface also is operable to receive, from a second content provider unit, a second specification of second digital content that is to be inserted into said broadcast system and a second insertion schedule by which said second digital content is to be inserted into said broadcast system;

said collection unit also is operable to collect said second digital content by at least one of actively retrieving and reactively receiving said second digital content from a source thereof identified in said second specification;

said insertion unit also being operable to transfer said second digital content from said collection unit to said mixing unit according to said second insertion schedule.

4. (Previously Presented) The liaison unit of claim 3, wherein said first specification, said first insertion schedule, said second specification and said second insertion schedule are provided to said CP interface using a common communications protocol.

5. (Previously Presented) The liaison unit of claim 1, wherein said specification includes at least one of the following:

a characterization of the type of said digital content;

a resource locator to define a location where said digital content can be obtained by said liaison unit;

a transfer schedule by which said liaison unit is to obtain said digital content;

an indication of whether said liaison unit will actively retrieve or responsively receive said digital content from a source of said digital content;

an indication of whether said digital content is to be compressed by said content provider or by said liaison unit;

an indication of whether said digital content is to be encrypted by said content provider or by said liaison unit; and

an indication of whether said digital content is to undergo forward error correction transformations by said content provider or by said liaison unit.

6. (Previously Presented) The liaison unit of claim 5, wherein said transfer schedule includes a first set of at least one time for said digital content to be collected and a second set of at least one time for said digital content to be transferred, said second set being different than said first set.

7. (Previously Presented) The liaison unit of claim 1, wherein said liaison unit is sufficiently robust to interpret a valid insertion schedule whenever said insertion schedule is defined in terms of each of the following scheduling parameters taken alone or in combination:

a start time of a time slot during which an item can be output from said liaison unit to said broadcast system;

an end time for said time slot;

a duration (D) of said time slot;

a time interval (INT) between successive outputs of said item from said liaison unit to said broadcast system during said time slot;

a number (N) of times that said item is to be output from said liaison unit to said broadcast system during a time slot;

a size (S) of said item; and

a bitrate (BTR) at which said item is to be output from said liaison unit to said broadcast system.

8. (Previously Presented) The liaison unit of claim 7, wherein said insertion schedule is a microschedule;

wherein said CP interface is operable to receive a macroschedule including at least one recurring time slot, each recurring slot having a microschedule, respectively; and

wherein said insertion unit is responsive to said macroschedule.

9. (Original) The liaison unit of claim 7, wherein, if two or more of said scheduling parameters are contradictory, then said liaison unit is operable to apply at least one conflict resolution rule to ignore at least one of the contradictory scheduling parameters in order to interpret said insertion schedule to be valid.

10. (Original) The liaison unit of claim 9, wherein said at least one conflict resolution rule includes at least one of the rules from the following Rule Table:

Rule Table

Parameters Specified				Rule
INT	BTR	D	N	
Y	Y	Y	Y	If INT < S/BTR, set INT = S/BTR Ignore N, Output at INT using BTR, for D (timed),
Y	Y	Y	N	If INT < S/BTR, set INT = S/BTR Output at INT using BTR, for D (timed),
Y	Y	N	Y	If INT < S/BTR, set INT = S/BTR Output at INT using BTR, N times (timed),
Y	Y	N	N	If INT < S/BTR, set INT = S/BTR Output at INT using BTR, indefinitely (timed),
Y	N	Y	Y	Set BTR = account BTR, If INT < S/BTR, set INT = S/BTR Ignore N, Output at INT using BTR, for D (timed),
Y	N	Y	N	Set BTR = account BTR, If INT < S/BTR, set INT = S/BTR Output at INT using BTR, for D (timed),
Y	N	N	Y	Set BTR = account BTR, If INT < S/BTR, set INT = S/BTR Output at INT using BTR, N times (timed),
Y	N	N	N	Set BTR = account BTR, If INT < S/BTR, set INT = S/BTR Output at INT using BTR, indefinitely (timed),
N	Y	Y	Y	Set INT = D/N, If INT < S/BTR, set INT = S/BTR Output at INT using BTR, for D (timed),
N	Y	Y	N	Set INT = S/BTR, Output at INT using BTR, for D (timed),
N	Y	N	Y	Set INT = S/BTR, Output at INT using BTR, N times (timed),
N	Y	N	N	Set INT = S/BTR, Output at INT using BTR, indefinitely (timed),
N	N	Y	Y	Set BTR = account BTR, Set INT = D/N, If INT < S/BTR, set INT = S/BTR Output at INT using BTR, for D,
N	N	Y	N	Output for D (non-timed),

Parameters Specified				Rule
INT	BTR	D	N	
N	N	N	Y	Output N times (non-timed),
N	N	N	N	Output indefinitely (non-timed).

11. (Previously Presented) The liaison unit of claim 1, wherein said CP interface receives said specification and said insertion schedule represented as at least one XML document from said content provider unit.

12. (Previously Presented) The liaison unit of claim 1, wherein said specification includes an account, each account including at least one catalog, each catalog including at least one independent item to be output by said liaison unit to said broadcast system or at least one group of related items to be output by said liaison unit to said broadcast system, each group including a group of related items or an independent item.

13. (Cancelled)

14. (Previously Presented) The liaison unit of claim 1, wherein:

said specification and insertion schedule are associated with an account; and

said insertion unit is operable to limit an insertion-schedule-dictated transference of said digital content so as to comply with a bandwidth allocation for said account.

15. (Previously Presented) The liaison unit of claim 14,

wherein said insertion unit limits said transference by processing said insertion schedule as a plurality of incremental time slices, said bandwidth allocation representing a maximum data amount of data that can be transferred in each time slice, respectively; and

wherein, if transference of said maximum amount of data takes place before the end of a time slice, then said insertion unit is operable to suspend the transference until a next time slice begins.

16. (Previously Presented) For use with a broadcast system operable to carry digital packets to multiple recipients simultaneously, a content provider unit comprising:

an insertion schedule generator to generate a specification of digital content to be inserted into said broadcast system and an insertion schedule by which said digital content is to be inserted, wherein said digital content pertains to data broadcasting; and

an interface to a liaison unit to provide, in a machine-readable form, said specification of said digital content that is to be inserted into said broadcast system and said insertion schedule by which said digital content is to be inserted into said broadcast system.

17. (Previously Presented) The content provider unit of claim 16, further comprising a source of said digital content.

18. (Previously Presented) The content provider unit of claim 16, wherein

said broadcast system is a first broadcast system, said machine-readable form is a first machine-readable form, said specification is a first specification, and said insertion schedule is a first insertion schedule; and

said content provider unit is operable provide to a second broadcast system, in a second machine-readable form, a second specification of second digital content that is to be inserted into said broadcast system and a second insertion schedule by which said second digital content is to be inserted into said broadcast system.

19. (Previously Presented) The content provider unit of claim 18, wherein each of said first machine-readable form and said second machine-readable form is compliant with a common protocol.

20. (Previously Presented) The content provider of claim 16, wherein said specification includes at least one of the following:

a characterization of the type of said digital content;

a resource locator to define a location where said digital content can be obtained by a broadcaster unit;

a transfer schedule by which said broadcaster unit is to obtain said digital content;

an indication of whether said broadcaster unit will actively retrieve or responsively receive said digital content from a source of said digital content;

an indication of whether said digital content is to be compressed by a content provider or by said liaison unit;

an indication of whether said digital content is to be encrypted by said content provider unit or by said liaison unit; and

an indication of whether said digital content is to undergo forward error correction transformations by said content provider or by said liaison unit.

21. (Cancelled)

22. (Previously Presented) The content provider unit of claim 16, wherein said machine-readable form is a first machine-readable form, and said specification is a first specification and said insertion schedule is a first insertion schedule, said first specification and said first insertion schedule corresponding to a first account maintained by said digital content provider unit, said first account being bounded by a first bandwidth allocation; and

said content provider unit is operable to provide, to said broadcast system in a second machine-readable form, a second specification of second digital content that is to be inserted into said broadcast system and a second insertion schedule by which said second digital content is to be inserted into said broadcast system, said second specification and said second insertion schedule corresponding to a second account maintained by said content provider unit, said second account being bounded by a second bandwidth allocation different than said first bandwidth allocation.

23. (Previously Presented) The content provider unit of claim 16, wherein said insertion schedule generator is sufficiently robust to generate a valid insertion schedule in terms of each of the following scheduling parameters taken alone or in combination:

a start time of a time slot during which an item can be output from said liaison unit to said broadcast system;

an end time for said time slot;

a duration of said time slot;

a time interval between successive outputs of said item from said liaison unit to said broadcast system during said time slot;

a number of times that said item is to be output from said liaison unit to said broadcast system during a time slot;

a size of said item; and

a bitrate at which said item is to be output from said liaison unit to said broadcast system.

24. (Previously Presented) The content provider unit of claim 23, wherein said insertion schedule is a microschedule, and

wherein said insertion schedule generator is operable to provide a macroschedule including at least one recurring time slot, each recurring slot having a microschedule, respectively.

25. (Previously Presented) The content provider unit of claim 16, wherein said machine readable form includes representation of said specification and said insertion schedule as at least one XML document.

26. (Previously Presented) The content provider unit of claim 16, wherein said specification includes an account,

each account including at least one catalog, each catalog including at least one independent item to be output by said liaison unit to said broadcast system or at least one group of related items to be output by said liaison unit to said broadcast system, each group including a group of related items or an independent item.

27 – 34. (Cancelled)

35. (Previously Presented) A method as embodied in elements which form the content liaison unit of claim 1.

36. (Previously Presented) A computer-readable medium having embodied thereon at least one program to cause at least one processor to implement the content liaison unit of claim 1.

37. (Previously Presented) A method as embodied in elements which form the content provider unit of claim 16.

38. (Previously Presented) A computer-readable medium having embodied thereon at least one program to cause at least one processor to implement the content provider unit of claim 16.

39 – 43. (Cancelled)

44. (Previously Presented) A data broadcast system for use with a broadcast system operable to carry digital packets to multiple recipients simultaneously, the data broadcast system comprising:

a content provider unit to generate a specification of digital content and an insertion schedule by which the digital content is to be inserted into a broadcast signal, wherein the digital content pertains to data broadcasting; and

a content liaison unit to communicate with the content provider unit over a communications network, to receive the specification of digital content and the insertion schedule from the content provider unit over the communications network, and to insert the digital content into the broadcast signal according to the insertion schedule.

45. (Previously Presented) The data broadcast system of claim 44, wherein the broadcast signal into which the digital content is inserted contains therein video and/or audio program content.

46. (Previously Presented) The data broadcast system of claim 44, wherein the content provider unit and the content liaison unit negotiate with each other over the communications network to allocate a bandwidth for the digital content specified by the content provider unit.

47. (Previously Presented) The data broadcast system of claim 44, further comprising:

at least one receiver device to receive the broadcast signal including the digital content and to extract data from the received broadcast signal.

48. (New) The liaison unit of claim 1, wherein the insertion schedule received from the content provider unit includes a broadcast time of the digital content.

49. (New) The content provider unit of claim 16, wherein the insertion schedule includes a broadcast time of said digital content.

50. (New) The data broadcast system of claim 44, wherein the insertion schedule received from the content provider unit includes a broadcast time of the digital content.